

IN THE CLAIMS:

Please AMEND the claims and ADD new claims as indicated below.

1. (CURRENTLY AMENDED) A wavelength characteristic variable filter comprising:
a filter that is arranged in a path of a wavelength ~~division-multiplexed~~ light~~collimated~~
~~beam~~ including a plurality of different wavelengths multiplexed together and which are not
separated into respective wavelengths and ~~having a non-uniform intensity distribution~~, the filter
having a diffraction unit that is movable in a direction substantially perpendicular to a direction of
the ~~collimated beam~~wavelength multiplexed light, wherein the filter has first and second filter
portions with the diffraction unit between the first and second filter portions, and the ~~collimated~~
~~beam~~wavelength multiplexed light hits the first and second filter portions and the diffraction unit
so that ~~intensity-diffraction loss~~ of the ~~collimated beam~~wavelength multiplexed light incident on
the diffraction unit varies as the diffraction unit is moved and the filter thereby provides a
transmittance versus wavelength characteristic in which transmittance of the filter changes with
wavelength; and

a moving unit that moves the diffraction unit to thereby change the transmittance versus
wavelength characteristic of the filter.

2. (PREVIOUSLY PRESENTED) The wavelength characteristic variable filter
according to claim 1, wherein the first and second filter portions are made of film formed on a
surface of the filter, and the diffraction unit is a slit formed between the first and second filter
portions and having a pair of edges, wherein the slit is formed by removing a part of a film from
the surface of the filter.

3. (CURRENTLY AMENDED) The wavelength characteristic variable filter
according to claim 2, further comprising:

a plurality of the filters arranged in the path of the ~~collimated beam~~wavelength
multiplexed light, wherein the moving unit moves all or some of the slits simultaneously.

4. (ORIGINAL) The wavelength characteristic variable filter according to claim 3,
wherein the slits of adjoining filters make a predetermined angle with each other.

5. (ORIGINAL) The wavelength characteristic variable filter according to claim 3,
wherein the moving unit moves all the slits in one direction or moves each slit in a respective

direction.

6. (CURRENTLY AMENDED) The wavelength characteristic variable filter according to claim 1, wherein

- the diffraction unit is a first diffraction unit,
- the filter further comprises a second diffraction unit, a third filter portion and a fourth filter portion,
- the first and second diffraction units each have first and second edges, and the first and second edges are formed at a pitch of $1/4$ or less of a beam diameter of the ~~collimated~~ beamwavelength multiplexed light, and
- the first diffraction unit is formed between the first and second filter portions with one of the first and second filter portions adjacent to the first edge of the first diffraction unit and the other of the first and second filter portions adjacent to the second edge of the first diffraction unit, and
- the second diffraction unit is formed between the third and fourth filter portions with one of the third and fourth filter portions adjacent to the first edge of the second diffraction unit and the other of the third and fourth filter portions adjacent to the second edge of the second diffraction unit.

7. (ORIGINAL) The wavelength characteristic variable filter according to claim 1, wherein the moving unit moves the diffraction unit by using any one of an electromagnetic force driving mechanism, a thermal expansion driving mechanism, a piezoelectric effect driving mechanism, and an electrostatic force driving mechanism, or a combination thereof.

8. (ORIGINAL) The wavelength characteristic variable filter according to claim 3, wherein the filters have different wavelength characteristics.

9. (PREVIOUSLY PRESENTED) The wavelength characteristic variable filter according to claim 1, wherein

- the first and second filter portions are reflection type filters, and
- a direction from which light enters in the first and second filter portions and a direction towards which light is emitted out from the first and second filter portions are parallel.

10. (PREVIOUSLY PRESENTED) The wavelength characteristic variable filter

according to claim 1, further comprising a glass material, wherein the first and second filter portions are film formed on the glass material, and the diffraction unit is a slit between the first and second filter portions.

11. (CURRENTLY AMENDED) An apparatus comprising:

an optical amplifier including

a filter that is arranged in a path of a ~~wavelength division-multiplexed light~~collimated-beam including a plurality of different wavelengths multiplexed together and which are not separated into respective wavelengths ~~and having a non-uniform intensity distribution~~, the filter having a diffraction unit that is movable in a direction substantially perpendicular to a direction of the ~~collimated-beam~~wavelength multiplexed light, wherein the filter has first and second filter portions with the diffraction unit between the first and second filter portions, and the ~~collimated-beam~~wavelength multiplexed light hits the first and second filter portions and the diffraction unit so that ~~intensity-diffraction loss~~ of the ~~collimated-beam~~wavelength multiplexed light incident on the diffraction unit varies as the diffraction unit is moved and the filter thereby provides a transmittance versus wavelength characteristic in which transmittance of the filter with respect to a wavelength is set; and

a moving unit that moves the diffraction unit of the filter to a predetermined position between a center and an edge of the ~~collimated-beam~~wavelength multiplexed light to thereby change the transmittance versus wavelength characteristic of the filter.

12. (CURRENTLY AMENDED) An optical communications apparatus comprising:

a filter that is arranged in a path of a ~~wavelength division-multiplexed collimated beam~~light including a plurality of different wavelengths multiplexed together and which are not separated into respective wavelengths ~~and having a non-uniform intensity distribution~~, the filter having a diffraction unit that is movable in a direction substantially perpendicular to a direction of the ~~collimated-beam~~wavelength multiplexed light, wherein the filter has first and second filter portions with the diffraction unit between the first and second filter portions, and the ~~collimated beam~~wavelength multiplexed light hits the first and second filter portions and the diffraction unit so that ~~intensity-diffraction loss~~ of the ~~collimated-beam~~wavelength multiplexed light incident on the diffraction unit varies as the diffraction unit is moved and the filter thereby provides a transmittance versus wavelength characteristic in which transmittance of the filter with respect to a wavelength is set; and

a moving unit that moves the diffraction unit of the filter to a predetermined position between a center and an edge of the ~~collimated beam~~ wavelength multiplexed light.

13. (CURRENTLY AMENDED) An apparatus comprising:

a filter positioned in a path of a wavelength ~~division~~-multiplexed ~~collimated~~-light including a plurality of different wavelengths multiplexed together and which are not separated into respective wavelengths and ~~having a non-uniform intensity distribution~~, the filter comprising first and second film portions with a slit between the first and second film portions so that the ~~collimated~~ wavelength multiplexed light hits the first and second film portions and the slit, and diffraction of the ~~collimated~~ wavelength multiplexed light by the slit in combination with characteristics of the first and second film portions causes the filter to thereby have a transmittance versus wavelength characteristic in which transmittance of the filter changes with wavelength; and

a moving unit moving the filter so that the slit moves substantially perpendicular to a travel direction of the ~~collimated~~ wavelength multiplexed light to thereby change the transmittance versus wavelength characteristic of the filter.

14. (CURRENTLY AMENDED) An apparatus according to claim 13, further comprising:

a plurality of the filters arranged in the path of the ~~collimated~~ wavelength multiplexed light, wherein the moving unit moves all or some of the filters simultaneously to thereby change a combined transmittance versus wavelength characteristic of the filters.

15. (PREVIOUSLY PRESENTED) An apparatus according to claim 14, wherein the slits of adjoining filters make a predetermined angle with each other.

16. (PREVIOUSLY PRESENTED) An apparatus according to claim 14, wherein the moving unit moves all or some of the filters so that all the slits of the moved filters move in one direction or so that the slit of each respective filter moves in a respective direction.

17. (CURRENTLY AMENDED) The wavelength characteristic variable filter according to claim 1, wherein the first and second filter portions each have a same, non-zero transmittance versus wavelength characteristic over wavelengths in the ~~collimated~~ wavelength multiplexed light.

18. (CURRENTLY AMENDED) The wavelength characteristic variable filter according to claim 2, wherein the first and second filter portions each have a same, non-zero transmittance versus wavelength characteristic over wavelengths in the ~~collimated~~ wavelength multiplexed light.

19. (CURRENTLY AMENDED) The apparatus according to claim 11, wherein the first and second filter portions each have a same, non-zero transmittance versus wavelength characteristic over wavelengths in the ~~collimated~~ wavelength multiplexed light.

20. (CURRENTLY AMENDED) The apparatus according to claim 13, wherein the first and second film portions each have a same, non-zero transmittance versus wavelength characteristic over wavelengths in the ~~collimated~~ wavelength multiplexed light.

21. (NEW) The wavelength characteristic variable filter according to claim 1, wherein the wavelength multiplexed light is collimated.

22. (NEW) The apparatus according to claim 11, wherein the wavelength multiplexed light is collimated.

23. (NEW) The optical communications apparatus according to claim 12, wherein the wavelength multiplexed light is collimated.

24. (NEW) The apparatus according to claim 13, wherein the wavelength multiplexed light is collimated.